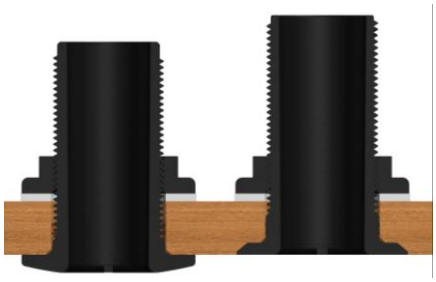
RECESSED SKIN FITTINGS

Designed and made in New Zealand, Tru-Design Recessed Skin Fittings are the superior composite thru-hull solution for reduced drag.





Skin Fitting Recessed Skin Fitting

The Recessed Skin Fitting body and nut are moulded from glass fibre reinforced nylon composite. High strength, high-modulus glass fibres provide dramatic strength, stiffness, toughness and dimensional stability. These properties allow a significant weight reduction over metallic fittings (weights listed on Page 3).

Tru-Design Skin Fittings eliminate the corrosion and electrical bonding problems associated with metallic fittings.

Our Skin Fittings meet ISO International Standards giving added assurance of performance in the harsh marine environment.

MODELS

Part #	Description
90676	Skin Fitting Recessed ½" BSP Black
90677	Skin Fitting Recessed ¾" BSP Black
90678	Skin Fitting Recessed 1" BSP Black
90679	Skin Fitting Recessed 1¼" BSP Black
90680	Skin Fitting Recessed 1½" BSP Black

Part #	Description
90714	Skin Fitting Recessed ½" NPS Black
90715	Skin Fitting Recessed ¾" NPS Black
90716	Skin Fitting Recessed 1" NPS Black
90717	Skin Fitting Recessed 1¼" NPS Black
90718	Skin Fitting Recessed 1½" NPS Black



Part #	Description
90709	Skin Fitting Recessed ½" BSP White
90710	Skin Fitting Recessed ¾" BSP White
90711	Skin Fitting Recessed 1" BSP White
90712	Skin Fitting Recessed 1¼" BSP White
90713	Skin Fitting Recessed 1½" BSP White

Part #	Description
90732	Skin Fitting Recessed ½" NPS White
90733	Skin Fitting Recessed ¾" NPS White
90734	Skin Fitting Recessed 1" NPS White
90735	Skin Fitting Recessed 1¼" NPS White
90736	Skin Fitting Recessed 1½" NPS White

STANDARDS

Tru Design Skin Fittings are certified by the International Marine Certification Institute (IMCI) to meet;

ISO 9093-2 Small craft -- Seacocks and through-hull fittings -- Part 2: Non-metallic
*Note – ½" Skin Fittings do not meet ISO 9093-2





In meeting ISO 9093-2, our skin fittings have been tested with a 155kg load hanging off a ball valve and hose fitting as shown.


TYPE APPROVAL CERTIFICATE

TRUDESIGN
AUCKLAND - NEW ZEALAND

SEACOCKS / THROUGH-HULL FITTINGS

Bureau Veritas – as of August 28, 2012 Tru Design have Bureau Veritas Marine Division Approval (certificate #27801/A0 BV) for Skin Fittings, Ball Valves, and Aquavalves. This covers the commercial marine market whereas IMCI (above) covers the recreational market.

KEY FEATURES

Feature :	
Manufactured from a glass reinforced nylon composite	High strength and light weight.
Compatible with most hull types	Can be used on wood or GRP hulls.
Immune to corrosion and electrolysis	Long life with no concerns over decreased performance due to corrosion.
Chemical resistant	Impervious to diesel, petrol and antifouling paints.
UV resistant	These fittings will not break down with ultraviolet light or discolour from the sun.
High quality surface finish	Will not discolour with green film as similar bronze fittings do.
Paintable	Can be painted with all types of antifouling. Antifouling paint stays adhered to the skin fitting, alleviating the chore of grinding and cleaning back flaked paint from bronze fittings before applying antifouling.
Fits Tru-Design Ball Valves & BSPP threads	Universal compatibility to other Tru-Design fittings, and other marine components.
Large operating temperature range	Suitable for all marine environments, from -20°C to +110°C.
Supplied in individual plastic bags with header card and information sheet	Header card states IMCI Certification, size of hose tail and comes with instructions in the bag as per IMCI regulations.

SPECIFICATIONS

HULL COMPATIBILITY

Tru-Design Recessed Skin Fittings are suitable for installation in wood and fiberglass / composite types of hull construction.

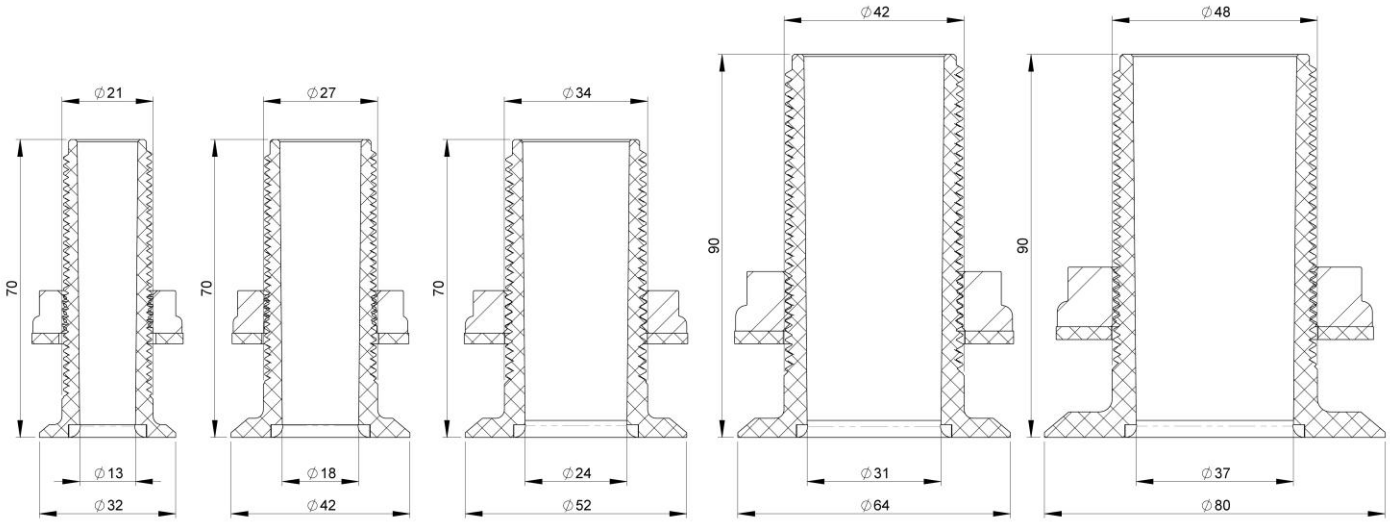
Tru-Design Recessed Skin Fittings are also able to be used on caulked solid wood hulls – care should be taken to only locate the skin fitting in the centre of any individual plank.

FLOW DIAMETER & HULL THICKNESS

Size	Minimum I.D.	Maximum Hull Thickness
½" BSP	13mm	28mm
¾" BSP	18mm	28mm
1" BSP	24mm	28mm
1¼" BSP	31mm	30mm
1½" BSP	37mm	30mm

DIMENSIONS & WEIGHTS

All dimensions in millimetres.
All dimensions nominal.
All weights in grams.



½"	¾"	1"	1¼"	1½"
26g	40g	58g	102g	136g

INSTALLATION

Full installation instructions are supplied with the Recessed Skin Fitting.

Location & Drilling:

Ensure there is sufficient room on the inside of the boat to allow the Ball Valve to be screwed onto the Skin Fitting without hitting the bulkhead or other part of the hull. Also ensure it is located where no inadvertent opening or closing of the valve can occur.

Mark the location. Drill from the inside a pilot hole 3mm in diameter. Drill from the outside of the hull a recess that is 1mm larger in diameter than the flanged head of the chosen Recessed Skin Fitting. Only drill deep enough to allow the flange of the Recessed Skin Fitting to sit in the recess flush with the outside of the hull. A hole-saw can be used to cut the recess and a chisel used to remove the material.

Re-drill through the centre (pilot hole) a hole that is 1mm larger in diameter than the outside diameter of the thread of the chosen Skin Fitting. A packer may be required to provide a flat surface for the nut and washer on the inside of the hull.

Sealant:

Use Epoxy West System or similar 2 pot epoxy to ensure a water tight and strong mechanical seal between the hull and Skin Fitting. This method effectively makes the skin fitting part of the hull.

Tip – adding powder to the West System will help minimize “running” of the epoxy.

Fitting:

Coat the Skin Fitting with epoxy only over the length of the thread that will suit the thickness of hull, and also on the underside of the flange.

Push the Skin Fitting into the hull from the outside. The epoxy should hold it in place whilst you reposition inside, or alternatively, use a piece of masking tape to lightly tape the flange to the outside of the hull.

Hold the Skin Fitting in place and drop the supplied washer over the Skin Fitting followed by the nut.

Tighten nut by hand with enough pressure to lightly squeeze some epoxy out but not all.

Clean excess epoxy from outside of hull, and if used, remove masking tape. Clean any visible epoxy off the thread.

After 24 hours the nut can be tightened to no more than 15 ft.lb – there is no need to over tighten this nut as the fitting is now part of the hull.

Thread Sealant Methods:

Teflon tape

Teflon tape is a traditional method which provides a good seal when applied correctly, however in some cases if the position or tightness of the Ball Valve or Skin Fitting is incorrect, it has to be unscrewed and more tape applied, slowing the construction process. Additionally, the fitting can sometimes be turned by hand after being installed.

Sikaflex 291i

Takes approximately 2 hours to cure, then hoses can be attached. Full cure takes 24 hours. The Skin Fitting is not able to be turned after cure but can be undone with the use of a larger spanner. The nut does not crack open easily and has to be unscrewed the whole way by spanner which shows how well it has adhered and sealed the joint. Colour = Black.

3M Fast Cure 5200

Takes slightly less than 2 hours to cure, then hoses can be attached. Full cure takes 24 hours. The Skin Fitting is not able to be turned after cure but can be undone with the use of a larger spanner. The nut does not crack open easily and has to be unscrewed the whole way by spanner which shows how well it has adhered and sealed the joint. Colour = White.

Locktite 55 Thread Cord

This is a coated multifilament thread designed as a faster method than Teflon tape to seal threaded pipes and fittings. The main advantage is that a Ball Valve for example could be screwed down, then screwed back a turn to suit positioning whilst maintaining a tight seal. This eliminates the need to remove the entire Ball Valve and apply more tape as with traditional Teflon tape. Colour = White.

Instructions for Sikaflex 291i, 3M Fast Cure 5200, and Locktite 55 Thread Cord products are shown on their individual packaging.

TAPERED THREAD VS PARALLEL BSP THREAD

Note: Do not use with tapered thread valves or fittings.

The thread type on all Tru-Design Skin Fittings is a British Standard Pipe Parallel thread (BSPP). The thread is a mechanical fastening with sealing provided by tape or one of the above sealant methods. These methods give a secure mechanical joint between the Skin Fitting and connected components such as Ball Valves. A tapered thread cannot provide this strong connection. Mixing tapered and parallel threads can result in damage to either of the components.

BONDING

There is no need to tie/bond Tru-Design Skin Fittings electrically together as there are no corrosion or electrolysis problems as can be experienced when using bronze fittings.

SERVICING

As composite Skin Fittings are immune to corrosion, minimal servicing is required.

Skin fittings should be checked for secure fitting into the hull and to other fittings at regular intervals. Upon hauling out, the exterior of the fitting should be checked for damage.

If fittings are removed, the tape or sealant should be removed and replaced.

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